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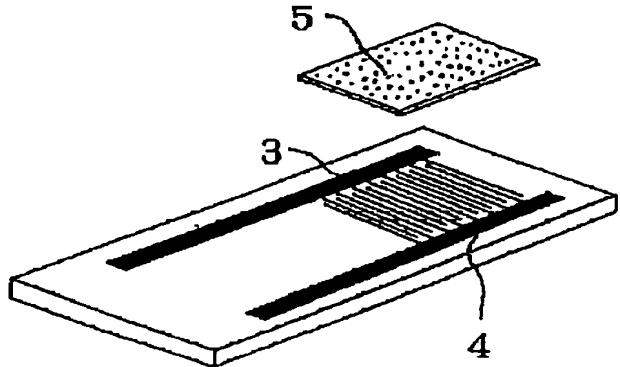
APPLICATION DATE : 18-08-97
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TITLE : CURRENT AMPLIFICATION TYPE
OXYGEN SENSOR



ABSTRACT : PROBLEM TO BE SOLVED: To improve detection sensitivity by placing on a comb-shaped electrode a membrane in which a mediator slightly soluble in a peroxidase and water is immobilized, reducing the oxidant of the mediator which occurs due to an oxygen reaction in the membrane at one electrode, and oxidizing the oxidant of the mediator at the other electrode.

SOLUTION: An immobilization film 5 in which a mediator slightly soluble in a peroxidase and water is immobilized in a film is adhered on a comb-shaped electrode. At the time of measurement, a generator electrode 3 is set at a potential that reduces an oxidized-type mediator, and a collector electrode 4 is set at a potential that oxidizes a reduced-type mediator. In the case of adding hydrogen peroxide into a measurement liquid, an oxygen reaction occurs in a membrane in which a mediator and a peroxidase coexist to generate an oxidized-type mediator. The oxidized-type mediator is reduced at the generator 3 and again oxidized at the collector electrode 4. A redox cycling reaction occurs between the generator electrode 3 and the collector electrode 4 to enable the amplification of the output current of a sensor.

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